

MAKING CONNECTIONS:

Facilitating Learning Through Making

A Project of Children's Museum of Pittsburgh

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FACILITATING LEARNING THROUGH MAKING

Maker Educators play an essential role in supporting learning in makerspaces and through maker programs through facilitation.

Facilitation might mean hands on co-learning between a staff member and participants. It might mean an interactive discussion with participants while they are engaged. It might even mean inserting signs or resources into the space to further their creative process. Ultimately, facilitation means using an awareness of the maker-program's goal to facilitate learners toward a particular learning objective.

This game is designed to encourage discussion about three factors related to the facilitation of maker-based learning experiences: the learners, the learning objectives, and the strategies educators use to facilitate learners' engagement towards a particular learning objective.

WHAT'S IN THE GAME?

The game is composed of three kinds of cards:

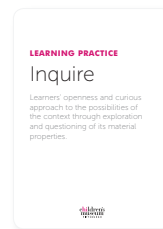
Learner Types: Learners approach a making experience with many different motivations, interests, questions and ways of being. These cards identify a range of archetypes, or examples of the kinds of learners who may engage in making. The types identified on the cards are not meant to be exhaustive; rather they represent some of the common types of learners—children and adults—who visit MAKESHOP, the makerspace at Children's Museum of Pittsburgh.



Each card contains the Learner Type and short description on one side. The other side provides some questions to consider to support each type of learner's engagement in making.

Learning Practices: The Learning Practices of Making is an empirically identified framework that describes observable behaviors of learners in MAKESHOP. These practices represent the learning objectives that we value and design to support in MAKESHOP. We use a practice-based approach to identify and describe learning, rather than an outcomes-based approach.

In this way, we are focusing on the behaviors—the actions and interactions of learners as they engage in making as a learning process, rather than on the end results or outcomes of their experience. Viewing learning in this way, we are constantly evaluating, re-thinking, discussing and tweaking the learning experiences we design through the lens of the practices to better support children and families' engagement and growth in one or more of these practices. We include these Learning Practices as an example of "learning objectives" for this game. It is recognized that these Learning Practices may not reflect the learning objectives of your particular program or organization. We invite you to use these Learning Practices as a reflective tool, but to also generate your own cards that express the learning goals of your maker-based program or space.



Each card contains the Learning Practice and short description on one side. The other side provides contextual information about the practice as well as evidence of learner engagement in the practice.

Facilitation Strategies: Maker educators use an assortment of techniques to facilitate different types of learners engagement in a maker-based learning experience, towards a particular learning objective. These cards include a variety of these strategies. Just as there are many types of learners, there are many types of educators, who may be more or less comfortable using various strategies in a given context. This game assumes that there is not a "one size fits all" approach to facilitating successful maker-based learning experiences, and therefore includes a range of possible strategies that a maker educator might apply while facilitating. Again, the strategies identified on these cards are not meant to be exhaustive; rather they represent some of the strategies that have been identified by our educators in MAKESHOP. We invite you to use these strategies as a tool, but to also generate your own cards that express the tried and true strategies that are used in your maker-based program or space.



Each card contains one facilitation strategy.

HOW TO PLAY THE GAME

This game can be played in groups of two, or with up to six players.

1. To begin, distribute 5-10 Facilitation Strategy cards to each player randomly.
2. Place one Learner Type card and one Learning Practice card face up on the table as a pair.
3. Each player then chooses one Facilitation Strategy from their hand that they feel could be used to best facilitate the selected Learner Type's engagement in the selected Learning Practice, and places this card on the table beside or between the other cards.
4. After each player has played their card, the group discusses the reasoning and approach of each presented strategy.
5. Repeat this progression, using different combinations of Learner Types and Learning Practices.

As a variation, players can present a strategy that seems least useful in facilitating productive engagement between the selected Learner Type and Learning Practice.

If applicable, create unique cards for each category that represent the kinds of learners, learning objectives and facilitation strategies that are valued and used in your makerspace or maker program goals.

If groups are larger than six players, it is recommended to divide into smaller groups to play, and then reconvene to share everyone's experience.

GAME DEVELOPMENT

The game was developed through a partnership between the Children's Museum of Pittsburgh and the Entertainment Technology Center (ETC) at Carnegie Mellon University. ETC provided a design team of master's students to work with the museum. The design team observed learners in MAKESHOP to identify different types of learners as well as to better understand how the MAKESHOP team used facilitation within the space. Through an iterative process of sharing cards and game mechanics with the MAKESHOP team, the learner types and facilitation strategies were paired with the learning practices, which already served as foundational learning engagement goals for MAKESHOP.

For more information on the Learning Practices of Making go to www.makeshoppgh.org/resources/